

Dr. Danyal Naseer

Assistant professor (Department of Materials Science and Engineering)
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Education

- September 2019 - August 2025 | Ph.D. in Advanced Materials Engineering | Korea National University of Science and Technology (UST), Daejeon, South Korea
Thesis | *Ceramic multichannel membrane structure with tunable properties by sol-gel method for wastewater treatment*
- September 2015 - June 2019 | B.E. in Metallurgy and Materials Engineering | National University of Sciences and Technology (NUST), Islamabad, Pakistan
Thesis | *Quantification of interface adhesion strength of adhesive bonded dissimilar materials using ultrasonic non-destructive testing technique*

Research Interest

- Development of inorganic membranes, with tunable porous structures to provide sustainable solutions for wastewater filtration (microfiltration, ultrafiltration, nanofiltration).
- Synthesis and optimization of carbon-based nanofiltration membranes.
- Characterization of surface microstructure, pore morphology, permeate flux and surface fouling of the porous membrane materials.
- Investigation of membrane efficiency for different separation applications such as oil-in-water emulsion filtration, treatment of dye/salt wastewater, and organic solvent nanofiltration (OSN).

Professional Experience

Research Experience

September 2019 – August 2025 | Researcher | Nano Materials Research Division | Korea Institute of Materials Science (KIMS), Changwon, South Korea

Research Publications

Publications: 8 | Citations: 68 | h-index: 5

- Naseer, D., Lucio, M. D. S., Ha, J.-H., Lee, J., Lee, H. J., & Song, I.-H. (2025). Controlling substrate surface roughness via co-sintering of MF/UF ceramic membranes for high-integrity mesoporous top-layer coatings. **Journal of Membrane Science**, 739(2025), 124915. <https://doi.org/10.1016/j.memsci.2025.124915>. | **I.F 9.0**
- Naseer, D., Ha, J.-H., Lee, J., Lee, H. J., & Song, I.-H. (2025). Aqueous sol-gel derived zirconia-based asymmetric loose nanofiltration membrane for enhanced dye/salt separation at low pressure levels. **Desalination**, 613(2025), 119054. <https://doi.org/10.1016/j.desal.2025.119054>. | **I.F 9.8**
- Naseer, D., Ha, J.-H., Lee, J., Lee, H. J., & Song, I.-H. (2024). A novel and simple fabrication method for a biomimetic-inspired lath-structured ceramic microfiltration membrane for the treatment of oil-in-water emulsions. **Separation and Purification Technology**, 334(December 2023), 126040. <https://doi.org/10.1016/j.seppur.2023.126040>. | **I.F 9.0**

4. **Naseer, D.**, Ha, J.-H., Lee, J., Lee, H. J., & Song, I.-H. (2023). High-Performance γ - Al_2O_3 Multichannel Tube-Type Tight Ultrafiltration Membrane Using a Modified Sol-Gel Method. **Membranes** 2023, Vol. 13, Page 405, 13(4), 405. <https://doi.org/10.3390/MEMBRANES13040405>. | **I.F 3.6**
5. **Naseer, D.**, Ha, J.-H., Lee, J., & Song, I.-H. (2022). Preparation of Al_2O_3 multichannel cylindrical-tube-type microfiltration membrane with surface modification. **Applied Sciences**, 12(16), 7993. <https://doi.org/10.3390/app12167993>. | **I.F 2.5**
6. **Naseer, D.**, Ha, J.-H., Lee, J., Park, C., & Song, I.-H. (2022). Effect of the peptization process and thermal treatment on the sol-gel preparation of mesoporous α -alumina membranes. **Membranes**, 12(3), 313. <https://doi.org/10.3390/membranes12030313>. | **I.F 3.6**
7. Bukhari, S. Z. A., Anwar, M. S., **Naseer, D.**, Ha, J. H., Lee, J., & Song, I. H. (2021). Effect of graphite and Mn_3O_4 on clay-bonded SiC ceramics for the production of electrically conductive heatable filter. **Ceramics International**, 47(16), 23045–23052. <https://doi.org/10.1016/j.ceramint.2021.05.019>. | **I.F 5.6**
8. Mukarram Ali, Muhammad Shahid, Haseeb Ahmed Khan Lodhi, **Danyal Naseer**, I. S. (2019). Interface Adhesion Strength of Adhesive-Bonded Materials Using Ultrasonic Technique. **Journal of Multidisciplinary Approaches in Science (JMAS)**, 11(1 (2019)), 8–17.

Patents

1. Ceramic Nanofiltration Membrane for Selective Dye Rejection and Salt Permeation | Domestic (South Korea) | Application no. 2025-0112255 | August 13th, 2025
2. Co-sintering-based surface roughness-controlled ceramic separator and its manufacturing method | Domestic (South Korea) | Application no. 10-2025-0181794 | November 26th, 2025

Projects

1. Development of extruded ceramic membrane support, nanopore coating technology and hydrogen membrane module | funded by South Korean Ministry of Trade, Industry and Energy | September 2024 - December 2028 | Principal Investigator: Dr. In-Hyuck Song
2. Development of environmental nanomaterial-based ceramic membranes for public safety and resource recovery from emerging industrial wastewater | funded by South Korean Ministry of Science and ICT | July 2024 - December 2028 | Principal Investigator: Dr. Hong-Joo Lee
3. Development of ceramic ultrafiltration membrane for simultaneous separation and degradation | funded by South Korean Ministry of Science and ICT | January 2024 - December 2026 | Principal Investigator: Dr. Jongman Lee
4. Development of highly hydrophilic/oleophobic ceramic membrane for treatment of emulsified oily wastewater | **3M+ PKR funded by Korea National University of Science and Technology (Young Scientist+ Research Program)** | December 2022 - November 2023 | **Principal Investigator: Danyal Naseer**
5. Development of ceramic filter materials for the treatment of highly hazardous wastewater | funded by South Korean Ministry of Science and ICT | August 2020 - December 2024 | Principal Investigator: Dr. In-Hyuck Song
6. Development of porous ceramics for separation and capture | funded by South Korean Ministry of Science and ICT | January 2019 - December 2023 | Principal Investigator: Dr. Jang-Hoon Ha
7. Development of pore controlled ceramic honeycomb filter and module with high surface area for water treatment | funded by South Korean Ministry of Trade, Industry and Energy | June 2015 - May 2020 | Principal Investigator: Dr. In-Hyuck Song

Conferences

1. 2025 Spring Meeting of The Korean Ceramic Society | 16-18 April, 2025 | South Korea
2. 2024 Fall Meeting of The Korean Ceramic Society | 16-18 October, 2024 | South Korea
3. 17th International Conference on Inorganic Membranes | 1-5 July, 2024 | Brazil

4. 2023 Fall Meeting of The Korean Ceramic Society | 18-20 October, 2023 | South Korea
5. XVIII ECerS, Conference and Exhibition of the European Ceramic Society | 2-6 July, 2023 | France
6. 2023 Spring Meeting of The Korean Ceramic Society | 12-14 April, 2023 | South Korea
7. 2022 Fall Meeting of The Korean Ceramic Society | 26-28 October, 2022 | South Korea
8. 2022 Spring Meeting of The Korean Ceramic Society | 13-15 April, 2022 | South Korea
9. 2021 Spring Meeting of The Korean Ceramic Society | 16-18 June, 2021 | South Korea

Honors and Awards

- 2025 | Research Excellence Award (Graduation Award) | Korea National University of Science and Technology
- 2024 | UST Research Paper Award (Excellence Award) | Korea National University of Science and Technology
- 2024 | Best Poster Presentation Award at the UST Research Presentation Contest | Korea National University of Science and Technology
- 2024 | Outstanding Research Assistant Award | Korea Institute of Materials Science (school), Korea National University of Science and Technology
- 2024 | Excellence Award for the Oral Presentation at the UST-KIMS Academic Forum | Korea Institute of Materials Science (school), Korea National University of Science and Technology
- 2023 | Excellence Award for the Oral Presentation at the UST-KIMS Academic Forum | Korea Institute of Materials Science (school), Korea National University of Science and Technology
- 2023 | Best Oral Presentation Award at the symposium of American Ceramic Society Korea Chapter | Korean Ceramic Society
- 2022 | Project Grant at the UST Young Scientist+ Research Program | Korea National University of Science and Technology
- 2021 | Best Poster Award at the symposium of Engineering Ceramics | Korean Ceramic Society

Peer Reviewer Journals

- Springer Nature | *Discover Applied Sciences*
- Springer Nature | *Scientific Reports*